REMARKS

The Applicants have carefully studied the outstanding Office Action. The applicants gratefully acknowledge the Examiner's indication that claims 25-27 are allowed, and that claims 13 and 24 would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. The applicants believe that, in light of the amendments made to the independent base claims in the application, these base claims are now allowable.

The present response is intended to be fully responsive to all points of rejection raised by the Examiner, and is believed to place the application in condition for allowance. The applicants therefore earnestly request favorable reconsideration and allowance of the application.

Claim Amendments

Claim 1 is amended by the incorporation therein of the subject matter of claim 3, and claim 3 is cancelled without prejudice.

Claim 14 is amended by the incorporation therein of the subject matter of claim 16, and claim 16 is cancelled without prejudice.

Priority

The applicants note that a certified copy of the priority Israeli application has not been supplied by the International Bureau. The applicants are working to obtain such a certified copy of the priority document to comply with the requirements of 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 102

Claims 1-5, 8-10, 12, 14-18, 21, 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Sorin (U.S. Patent 6,847,742 B2). The Examiner states that:

> "Sorin discloses an optical device with all the limitations set forth in the claims, including: an input fiber for inputting an input optical signal, an output fiber for outputting an output optical signal, an optical path between said input fiber and said output fiber (Fig. 1, Fig. 4); a substrate ('14' +'15' in Fig. 1) comprising at least one step (`44' in Fig. 1) with predefined parameters (i.e. having a certain height and thickness), said at least one step being disposed in part of the optical path and adding a phase shift to light passing therethrough (column 3 lines 57-59); a variable phase shifting element controlled by an applied signal disposed serially with the at least one step in said part of the optical path (e.g. "26" Fig. 1; column 4 lines 19-21); such that the optical interference between light traversing those part of the optical path containing at least one step and light traversing those parts of the optical path not containing said at least one step results in a wavelength dependent transmission (gain equalization) through the device (column 3 lines 10-27); wherein the phase shift in said part of the optical path containing said at least one step is selected such that the said device has a predetermined spectral transmission profile (column 3 lines 10-27); wherein said variable phase shifting element is pixilated such that it shifts the phase of light passing through at least part of the optical path (column 4 lines 45-52, lines 61-65); wherein said variable phase shifting element is a liquid crystal device (column 4 lines 61-65); wherein the input fiber and the output fiber are disposed such that light passes from the input fiber to the output fiber transmission through the optical path (Fig. 1); wherein the applied signal is adjusted according to the spectral profile of the signal output such that the optical device performs dynamic gain equalization

(abstract; claim 1)."

Applicants respectfully disagree with the Examiner as to the interpretation of what is disclosed in Sorin.

Firstly, the Examiner asserts that Sorin shows "an optical path between said input fiber and said output fiber (Fig. 1, Fig. 4)." Though the applicants understand that the Examiner is referring to the **two** dotted lines marked A and B in Fig. 1 of Sorin as "**an** optical path," the applicants believe that this description is unreasonably broad, since the operation of the Sorin invention mandates use of a polarization splitter 40 such as a walk-off crystal, for the generation of **two distinct optical paths**. Each of these paths are treated separately by the so-called "step 44," to ensure like polarization properties in each path before entering the filtering components which perform the gain equalization functions in the Sorin invention.

In contrast to what is shown in Sorin, amended claim 1 of the present application recites "an optical path between said input fiber and said output fiber," which is truly a single path, indicated in the drawings by the plane wave 16 incident on the stepped substrate. Not only is there no need for more than a single optical path, but such a single path generates the output "obtained at optical infinity ..... resulting from the interference of the components of the incident beam passing through the separate stepped and unstepped sections of the substrate" (paragraph [0052] of the published application). Such a free-space interference phenomenon can only be generated by free space beam propagation, unlike what is shown in the Sorin arrangement.

Secondly, the Examiner asserts that Sorin shows "a substrate ('14' +'15' in Fig. 1) comprising at least one step (`44' in Fig. 1)." The applicants respectfully submit that the Examiner's description of the **four** separate optical components used in the Sorin invention, namely:

(i) a half-wave plate 44;

(ii) a tunable coupling member 14;

(iii) a fixed differential delay 15; and

(iv) a tunable differential delay,

as "a substrate comprising at least one step," as recited in amended claim 1 of the present application, is not proper.

Finally, the applicants respectfully submit that Sorin shows a tunable differential delay 18, which can be "a liquid crystal cell, that changes the differential delay **between the two delay paths**" (col. 3, lines 61-63). (Emphasis added). The liquid crystal cell of Sorin is operative to change the phase of the light passing through the whole of one path, in relation to that of the light passing through the whole of the second path. Though not specifically shown in Sorin, this could be performed by pixilation of the cell, such that one pixel covers one path, and the other, if present, the second path.

In contrast to what is shown in Sorin, amended claim 1 of the present application recites:

> "a variable phase shifting element controlled by an applied signal, disposed serially with said at least one step in said part of said optical path, and **pixilated such that it shifts the phase of light passing through at least a portion of said part of said optical path**" (emphasis added).

In the presently claimed invention, the pixilation on the phase shifting element of the present invention is applied such that the element can shift the phase of light passing through only a portion of one optical path, and not the whole of one optical path, as is shown in the embodiment of Figs. 5 and 7 of the present application. To the best of the applicants' understanding, nowhere in Sorin is there shown or suggested a variable phase shifting element which changes the phase of only a part of the light passing through either of the optical paths.

The applicants therefore respectfully submit, in view of the above arguments, that amended independent claim 1 is not anticipated by Sorin. The applicants therefore respectfully request withdrawal of such rejection. The applicants further respectfully submit that similar arguments apply to counter the Examiner's rejection under 35 U.S.C. 102(e) of independent claim 14, which has been amended in a manner similar to the amendment made to claim 1.

Claims 2, 4-5, 8-10 and 12 are all dependent on claim 1, directly or indirectly, and recite additional patentable subject matter. Since claim 1 is deemed allowable, claims 2, 4-5, 8-10 and 12, are also thus submitted as allowable.

Claims 15, 17-18 and 21 are all dependent on claim 14, directly or indirectly, and recite additional patentable subject matter. Since claim 14 is submitted to be allowable, claims 15, 17-18 and 21 are also thus deemed allowable.

Claim rejections - 35 USC § 103

Claims 6-7, 11, 19-20 and 22 are variously rejected under 35 U.S.C.103(a) as being unpatentable over Sorin, or over Sorin in view of Bouevitch (U.S. Published Patent Application 2003/0021526 A1).

The applicants respectfully submit that claims 6-7, 11, 19-20 and 22 are variously dependent on independent claims 1 and 14, directly or indirectly, and recite additional patentable subject matter. Since claims 1 and 14 are submitted to be allowable, claims 6-7, 11, 19-20 and 22 are also thus deemed allowable.

CONCLUSION

The applicants respectfully submit that, in the light of all of the arguments mentioned above, all of claims 1-2, 4-15, and 17 to 27, as variously amended, are novel, unobvious over any combination of the prior art cited by the Examiner, and recite patentable material, and are therefore all deemed to be allowable. Reconsideration and prompt allowance of this application are therefore respectfully requested.

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Respectfully submitted,

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